

**WHAT IS CLAIMED IS:**

1. A chimeric protein capable of inhibiting both cellular and humoral immune responses.
- 5 2. A chimeric protein comprising a domain having C5b-9 inhibitory activity and a domain having T Cell inhibitory activity.
3. A chimeric protein according to claim 2, wherein the protein exhibits at least about 25% of the C5b-9 inhibitory activity of said naturally occurring C5b-9 inhibitor protein.
- 10 4. A chimeric protein according to claim 2, wherein the protein has at least about 25% of the T Cell inhibitory activity of a naturally occurring T Cell inhibitor protein.
5. A chimeric protein according to claim 2, wherein the domain having C5b-9 inhibitory activity is derived from mammalian CD59.
- 15 6. A chimeric protein according to claim 2, wherein the domain having T Cell inhibitory activity is derived from mammalian CTLA4.
7. A chimeric protein according to claims 6, wherein the mammalian CTLA4 is selected from the group consisting of human and porcine CTLA4.
8. A chimeric protein according to claim 2, wherein the protein includes a  
20 linker region between the domain having C5b-9 inhibitory activity and the domain having T Cell inhibitory activity.
9. A chimeric protein according to claim 2, further comprising a cellular anchor moiety.
10. A chimeric protein according to claim 9, wherein the cellular anchor  
25 moiety is a GPI anchor.
11. A chimeric DNA construct comprising a domain derived from a DNA sequence encoding a domain having C5b-9 inhibitory activity and a DNA sequence encoding a domain having T Cell inhibitory activity.
12. A chimeric DNA construct according to claim 11, wherein the DNA  
30 sequence encoding a domain having C5b-9 inhibitory activity is derived from a DNA sequence encoding CD59.

13. A chimeric DNA construct according to claim 11, wherein the DNA sequence encoding a domain having T Cell inhibitory activity is derived from a DNA sequence encoding mammalian CTLA4.

14. A chimeric DNA construct according to claim 11, wherein the mammalian CTLA4 is selected from the group consisting of human and porcine CTLA4.

15. A cloning vector comprising a DNA construct according to claim 11.

16. A cloning vector according to claim 15, wherein the cloning vector is a retroviral vector.

17. A host cell transformed by the vector of claim 15.

18. Transgenic porcine cells comprising the chimeric protein of claim 10.

19. Transgenic porcine tissues comprising the chimeric protein of claim 10.

20. Transgenic whole organs comprising the chimeric protein of claim 10.

21. A chimeric protein comprising a domain having C3 inhibitory activity and a domain having T Cell inhibitory activity.

22. A chimeric protein according to claim 21, wherein the domain having C5b-9 inhibitory activity is derived from mammalian DAF.